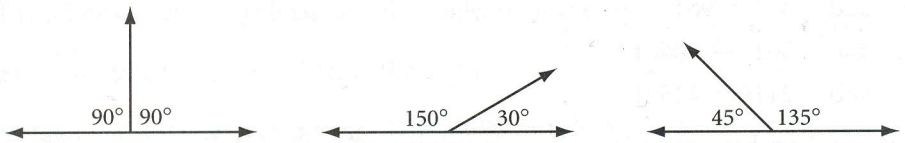
**2.** Sean draws these geometric figures on paper. His sister Courtney measures each angle with a protractor. They add the measures of each pair of angles to form a conjecture. Write their conjecture.




For Exercises 3–10, use inductive reasoning to find the next two terms in each sequence.

**3.** 1, 10, 100, 1000, ?, ?

**4.** $\frac{1}{6}, \frac{1}{3}, \frac{1}{2}, \frac{2}{3}, ?, ?$ (h)

**5.** 7, 3, −1, −5, −9, −13, ?, ?

**6.** 1, 3, 6, 10, 15, 21, ?, ?

**7.** 1, 1, 2, 3, 5, 8, 13, ?, ? (h)

**8.** 1, 4, 9, 16, 25, 36, ?, ? (h)

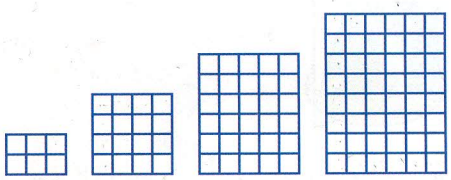
**9.** 32, 30, 26, 20, 12, 2, ?, ?

**10.** 1, 2, 4, 8, 16, 32, ?, ?

For Exercises 11–16, use inductive reasoning to draw the next shape in each picture pattern.

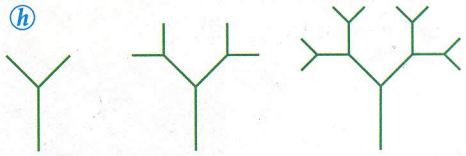
**11.**

**12.**



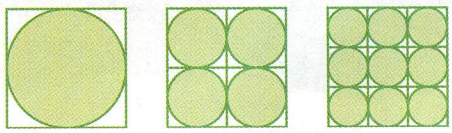
**13.** (h)

**14.** (h)



**15.** (h)

**16.**



Use the rule provided to generate the first five terms of the sequence in Exercise 17 and the next five terms of the sequence in Exercise 18.

**17.** $3n - 2$ (h)

**18.** $1, 3, 6, 10, \ldots, \frac{n(n+1)}{2}, \ldots$

**19.** Now it's your turn. Generate the first five terms of a sequence. Give the sequence to a member of your family or to a friend and ask him or her to find the next two terms in the sequence. Can he or she find your pattern?

**20.** Write the first five terms of two different sequences in which 12 is the 3rd term.

**21.** Think of a situation in which you have used inductive reasoning. Write a paragraph describing what happened and explaining why you think it was inductive reasoning. (h)